



AS 0300

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Nicholas L. Abbott
Justin J. Skaife

Date: May 15, 2001

Docket No.: 32026:0502

Serial No.: 09/784,232

Group Art Unit: Unassigned

Filed: February 15, 2001

For: **METHOD AND APPARATUS FOR DETECTION OF MICROSCOPIC PATHOGENS**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231 on May 15, 2001.

Bernard P. Friedrichsen

(Name of applicant, assignee
or Registered Representative)



(Signature)

May 15, 2001

(Date of Signature)

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Patent and Trademark Office
Washington, D.C. 20231

Dear Commissioner:

With respect to the examination of the above-described application, applicant cites the following documents, copies of which are enclosed. These documents are also listed on an accompanying Form PTO-1449. This Information Disclosure Statement is filed within 3 months of the filing date of the above-described national application, and it is thus submitted in compliance with 37 C.F.R. § 1.97(b)(1).



None

U.S. PATENTS

FOREIGN PATENTS

| <u>Inventor(s)</u> | <u>Patent No.</u> | <u>Publ. Date</u> |
|--------------------|-------------------|-------------------|
| Yamada, et al. | DE 3617710 A1 | 04 Dec. 1986 |
| Yuji, et al. | JP 02311822 A2 | 27 Dec. 1990 |
| Yuji, et al. | JP 02311824 A2 | 27 Dec. 1990 |
| Naoko, et al. | JP 03010222 A2 | 17 Jan. 1991 |
| Hideaki, et al. | JP 03039932 A2 | 20 Feb. 1991 |
| Kazuhiro, et al. | JP 04057024 A2 | 24 Feb. 1992 |
| Kazuhiro, et al. | JP 04057025 A2 | 24 Feb. 1992 |
| Masao, et al. | JP 04284423 A2 | 09 Oct. 1992 |
| Masao, et al. | JP 05134257 A2 | 28 May 1993 |
| Masao, et al. | JP 05134258 A2 | 28 May 1993 |
| Yasushi, et al. | JP 06175136 A2 | 24 Jun. 1994 |
| Toshifumi, et al. | JP 06194513 A2 | 15 Jul. 1994 |
| Yasushi, et al. | JP 06194662 A2 | 15 Jul. 1994 |
| Abbott, et al. | WO 99/63329 | 09 Dec. 1999 |
| Woolverton, et al. | WO 99/64862 | 16 Dec. 1999 |

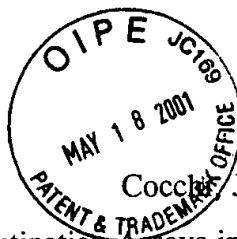
OTHER DOCUMENTS

Starkey, C.A. *et al.* "Evaluation of the Recombigen HIV-1 Latex Agglutination Test", *J. Clin. Microbiol.*, Vol. 28, No. 4, April 1990, pp. 819-822, published by the American Society for Microbiology.

Häussling, L. *et al.* "Biotin-Functionalized Self-Assembled Monolayers on Gold: Surface Plasmon Optical Studies of Specific Recognition Reactions", *Langmuir*, Vol. 7, No. 9, September 1991, pp. 1837-1840, published by the American Chemical Society (Washington, D.C.).

Schmitt, F.-J. *et al.* "Surface Plasmon Studies of Specific Recognition Reactions at Self-Assembled Monolayers on Gold", *Thin Solid Films*, Vol. 210/211, (1992), pp. 815-817, published by Elsevier Sequoia.

Charych, D.H. *et al.* "Direct Colorimetric Detection of a Receptor-Ligand Interaction by a Polymerized Bilayer Assembly", *Science*, Vol. 261, 30 July 1993, pp. 585-588, published by the American Society for the Advancement of Science (Washington, D.C.).



Cocchal J.M. et al. "Comparison Between Direct Binding, Competition and Agglutination Assays in the Characterization of Polyclonal Anti-idiotypes Against Anti-HBs Human Monoclonal Antibodies", *Immunological Meth.*, Vol. 160, 1993, pp. 1-9, Elsevier Science Publishers.

Kuby, J. *Immunology*, Second Edition (1994), pp. 147-150, W. H. Freeman and Company (New York, NY).

Cornell, B.A. et al. "A Biosensor that uses Ion-Channel Switches", *Nature*, Vol. 387, 5 June 1997, pp. 580-583, published by Nature Publishing (New York, NY).

Lin, V. et al. "A Porous Silicon-Based Optical Interferometric Biosensor", *Science*, Vol. 278, 31 October 1997, pp. 840-843, published by the American Society for the Advancement of Science (Washington, D.C.).

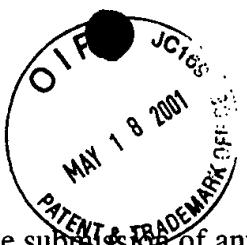
Pan, J.J. et al. "Molecular Recognition and Colorimetric Detection of Cholera Toxin by Poly(diacetylene) Liposomes Incorporating G_{m1} Ganglioside", *Langmuir*, Vol. 13, No. 6, 1997, pp. 1365-1367, published by the American Chemical Society (Washington, D.C.).

Gupta, V. K. et al. "Optical Amplification of Ligand-Receptor Binding Using Liquid Crystals", *Science*, Vol. 279, 27 March 1998, pp. 2077-2080, published by the American Society for the Advancement of Science (Washington, D.C.).

Dancil, K.S. et al. "A Porous Silicon Optical Biosensor: Detection of Reversible Binding of IgG to a Protein A-Modified Surface", *J. Am. Chem. Soc.*, Vol. 121, 1999, pp. 7925-7930, published by the American Chemical Society (Washington, D.C.).

Naoka, M. et al. "Ferroelectric Liquid Crystal Alignment Films Utility Poly (DL-amino acids) and Fibrous Proteins", *Kobunshi Ronbunshu*, Vol. 56, No. 6, June 1999, pp. 396-400.

Kim, S-R., et al. "Orientation of Liquid Crystals on Mechanically Rubbed Films of Bovine Serum Albumin: A Possible Substrate for Biomolecular Assays Based on Liquid Crystals", *Anal. Chem.*, Vol. 72, No. 19, 1 October 2000, pp. 4646-4653, published by the American Chemical Society (Washington, D.C.).



REMARKS

The submission of any documents herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 C.F.R. §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* prior art reference against the claims of the present application.

The documents cited above relate generally to the chemistry of liquid crystals and/or methods of detecting target species in analytical samples.

Although Applicants believe no fee is necessary for the filing of this Information Disclosure Statement, the Commissioner is hereby authorized to charge any additional fees that may be required to Deposit Account No. 06-1447. A duplicate copy of the Information Disclosure Statement is enclosed for this purpose.

It is requested that the foregoing documents be considered during examination of the accompanying application and be made of record therein.

Respectfully Submitted,

May 15, 2001
Date

Bernard P. Friedrichsen

Bernard P. Friedrichsen
Reg. No. 44,689
Attorney for Applicant
Foley & Lardner
150 East Gilman Street
Post Office Box 1497
Madison, Wisconsin 53701-1497
(608) 258-4281